Amendments to the Claims

Claims 1 – 61 cancelled.

62. (currently amended) A wide field of view scanner, comprising:

a scanning assembly constructed to receive ~~provide~~ a light excitation beam emitted from a light source and provide said excitation beam in a scanning motion to an examined surface;

an objective lens associated with and displaced by said scanning assembly arranged to provide an optical path from said light source to the examined surface and from the examined surface fluorescent light, excited in response to said excitation beam, to a light detector; said displaced objective lens and said scanning assembly providing said optical path having substantially constant length and extending partially over an axis of the scanning motion;

a focusing mechanism constructed to focus light provided by said objective lens with respect to the surface being scanned;

a translation system constructed to produce movement of the examined surface; and

a data collection control and processing unit arranged to collect data during the scanning motion and process the collected data.

63. (previously presented) The scanner of claim 62 wherein said scanning assembly includes oscillating support structure comprising a scan arm constructed to support said objective lens.

64. (previously presented) The scanner of claim 63 wherein said support structure includes a periscope assembly arranged to provide said optical path including said objective lens.

65. (previously presented) The scanner of claim 62 wherein said focusing mechanism includes a tilting mechanism constructed to tilt said examined surface for focusing light passing through said objective lens.

66. (previously presented) The scanner of claim 62 wherein said data collection control and processing unit is constructed to collect optical data over an arcuate scan motion of said objective lens and arranged to time the data collection during the arcuate scan motion.

67. (previously presented) The scanner of claim 66 including a data conversion system arranged to convert said collected data to a raster grid by averaging, for each raster point, the value of data points near the raster point, the values being weighted by their respective distances from the raster point.

68. (previously presented) The scanner of claim 62 wherein said objective lens has a numerical aperture larger than 0.5.

69. (previously presented) The scanner of claim 62 wherein said surface is part of a microscope slide comprising biological material.

70. (previously presented) The scanner of claim 62 wherein said surface is part of a DNA chip arranged for hybridization of a biological material prior to scanning.

71. (previously presented currently amended) The scanner of claim 62 wherein said surface is part of a DNA chip comprising biological material arranged for DNA sequencing.

72. (previously presented) A wide field of view scanner, comprising:

a scanning assembly including an oscillating support structure constructed to support and displace a micro-objective lens in a scanning motion, said oscillating support structure providing a constant optical path;

a driver constructed to displace said support structure in an oscillating motion;

a position transducer associated with said scanning assembly and constructed to provide a position signal corresponding to a position of said micro-objective lens during said scanning motion;

a light source constructed to emit excitation light directed to an object including biological material;

an optical detector constructed to detect fluorescent light excited in response to said excitation light from said object;

a translation system constructed to produce movement of the object; and

a data collection control and processing unit constructed and arranged to receive position signal from said position transducer and optical data from said optical detector.

73. (previously presented) The scanner of claim 72 wherein said micro-objective lens is an aspheric lens.

74. (previously presented) The scanner of claim 72 arranged for confocal detection of said fluorescent light.

75. (previously presented) The scanner of claim 72 wherein said scanning assembly includes a periscope assembly arranged to provide said optical path including said micro-objective lens.

76. (previously presented) The scanner of claim 75 wherein said micro-objective lens receives said fluorescent light stimulated by a spot of said excitation light passing through said micro-objective lens.

77. (previously presented) The scanner of claim 72 wherein said processing unit is constructed to generate an image from said detected fluorescent light.

78. (previously presented) The scanner of claim 72 wherein said driver and said translation system are constructed and arranged to scan said object in form of a microscope slide.

79. (previously presented) The scanner of claim 72 wherein said driver and said translation system are constructed and arranged to scan said object in form of a DNA chip.

80. (previously presented) The scanner of claim 72 wherein said driver and said translation system are constructed and arranged to scan said object in form of a hybridization array.

81. (previously presented) The scanner of claim 72 including an optical merging system constructed to merge at least two light beams into a single beam directed over said optical path extending over said support structure to said micro-objective lens.

Claims 82 – 90 cancelled

91. (previously presented) The scanner of claim 72 including a focusing mechanism constructed to focus said objective lens with respect to the surface being scanned.

92. (previously presented) The scanner of claim 91 wherein said micro-objective lens has a numerical aperture larger than 0.5.

92. (previously presented) The scanner of claim 72 wherein said driver and said translation system are constructed and arranged to scan said object in form of a microscope slide including a hybridized array.

93. (previously presented) The scanner of claim 92 wherein said microscope slide is located in a slide holder.

94. (previously presented) The scanner of claim 62 including a position transducer associated with said scanning assembly and constructed to provide a position signal corresponding to a position of said objective lens during said scanning motion.

95. (previously presented) The scanner of claim 62 wherein said processing unit is constructed to generate an image from said detected fluorescent light.

96. (previously presented) The scanner of claim 62 wherein said objective lens includes a micro-objective lens.

97. (previously presented) The scanner of claim 69 wherein said microscope slide is located in a slide holder.